

Name: _____

at1119paper: Complete the Square, $b = \text{odd}$ (v512)

Example

By completing the square, find both solutions to the given equation:

$$x^2 - 61x = -624$$

Add $\left(\frac{-61}{2}\right)^2$, which equals $\frac{3721}{4}$, to both sides of the equation.

$$x^2 - 61x + \frac{3721}{4} = \frac{1225}{4}$$

Factor the left side.

$$\left(x + \frac{-61}{2}\right)^2 = \frac{1225}{4}$$

Undo the squaring.

$$\begin{aligned} x + \frac{-61}{2} &= \frac{-35}{2} \\ x &= \frac{61 - 35}{2} \\ x &= 13 \end{aligned}$$

$$\begin{aligned} \text{or} \\ x &+ \frac{-61}{2} = \frac{35}{2} \\ x &= \frac{61 + 35}{2} \\ x &= 48 \end{aligned}$$

Question 1

By completing the square, find both solutions to the given equation:

$$x^2 - 31x = 1242$$

Question 2

By completing the square, find both solutions to the given equation:

$$x^2 - 25x = -84$$

Question 3

By completing the square, find both solutions to the given equation:

$$x^2 - 57x = -630$$